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DEAVER

RAFT RIVER GEOTHERMAL INTERMEDIATE HOLE # 3

OPEN-FILE REPORT 76-665

Fractures Carbonaceous matrix

Calcareous matrix

and S. Kleunder

Lithology by E. G. Crosthwaite, H. R. Covington,

U.S.G.S. Water Resources Division Borehole Geophysics Research Project 15S-26E-22dddl Elev. 4875' Neutron 11-24-74 Electric Log Caliper Natural Gamma 11-24-74 11-24-74 11-24-74 11-24-74 Loess with 30-40% rhyolite, angular to subrounded 3/8-4 in. (1-10 cm) size range. RAFT FORMATION Gravel, sand, silt and clay; unconsolidated, tan to greenish tan.

Gravel contains angular to subrounded pebbles up to 2 in. (5 cm) in size, rhyolite, 50%-60%; quartzite, 25%-35%; tuff, 5%-10%; clay to fine non-calcareous matrix, 5%-25%.

Minor amounts of carbonate coating on pebbles. Sand is medium to coarse grained rhyolite and quartzite. Pyrite abundant 90-140 ft (27-43 m). ---- 16" Normal ----64"Normal Footage refers to 16"Normal 64"Normal is 10" lower Silt and fine sand, gray-green, tuffaceous. Thin gravel beds of rhyolite, quartzite, and tuff. Pyrite and biotite abundant throughout. Conglomerate, poorly consolidated, gray to gray-green, subangular to rounded pebbles up to 2 3/4 in. (7 cm) of tuff, rhyolite, and quartzite. Medium to fine grained, gray-green, tuffaceous sand and silt. Sands and silts are calcareous. Abundant biotite throughout with abundant pyrite below 280 ft (85 m). Medium to fine grained sand and sandy silt, gray-green and tuffaceous with calcareous to non-calcareous cement. Thin gravels of rhyolite, tuff and quartzite. Pebbles are subangular to subrounded, 3/8-2 in. (1-5 cm) in size. Pyrite and biotite abundant, 470-600 ft(143-183m). Carbonaceous at 540 ft and 560 ft (165 and 171 m respectively). Small high angle faults throughout. Major fault healed with calcite 634-636 ft (193.2-193.9 m) SALT LAKE FORMATION, UPPER PART Conglomerate, gray, well cemented, sub-angular to subrounded pebbles of rhyolite, quartzite, tuff, and limestone, up to 2 in. (5 cm). Few thin sandstone beds, gray, medium to fine grained containing limestone pebbles to 3/4 in. (2 cm). Non-calcareous. Siltstone, gray to gray-green, slightly calcareous. Thin very fine sandstone with abundant Sandstone, gray, subrounded to angular medium to coarse grains. Scattered rounded pebbles of rhyolite up to 2½ in. (6 cm) and calcareous clay balls up to 1½ (4 cm). Pyrite and calcite throughout. Siltstone interbedded with fine sandstone, green to gray-green, non-calcareous. Many small, high angle faults cemented with calcite and silica. Conglomerate, gray-green, rhyolite, tuff quartzite, angular to subrounded, up to 2 in. (5 cm), non-calcareous. Minor amounts of pyrite. Siltstone, green to gray-green, slightly calcareous to non-calcareous, thin interbeds of calcareous claystone and fine sandstone. Conglomerate 1030-1040 ft (314-317 m) subrounded pebbles up to 5 cm. Rhyolite 25%; quartzite, 25%; limestone, 10%; calcareous clay, 35%; tuff, 5 %. Many high angle faults and open fractures containing calcite and silica. Minor amounts of pyrite. Carbonaceous material 1004 ft (306 m). 1000 1000_ 1000 1000 Sandstone, gray-green, medium grained, subangular to subrounded, clear to frosted. Light gray non-calcareous clayey matrix. Abundant pyrite. Many open fractures containing calcite and silica. Brecciated 1140–1155 ft (347.5–352 m). Siltstone-sandstone interbedded, light gray-green siltstone, siliceous cement. Sandstone, medium grained, frosted, subangular to subrounded, slightly calcareous to non-calcareous. Abundant pyrite. Many open fractures with calcite and silica. Abundant carbonaceous material. Sandstone-siltstone-claystone interbedded, gray in color. Sand is medium to fine grained and calcareous. Abundant carbonaceous material. Conglomerate, poorly consolidated and coarse sand. Slightly calcareous subangular to subrounded pebbles and cobbles up to 4 in. (10 cm). Rhyolite, 10-20%; quartzite, 20-30%; black limestone, 30-60%. 10% biotite in the sand. Some carbonaceous material. 400 1400 1400 1400 . 1400 1400 1400 EXPLANATION 30 cps 50 cps 70 cps 433.7 TD